1. Prove Proposition 9.12
2. Do Project 9.13(i)
3. Determine whether each of the following functions is an injection, surjection, or bijection. Prove your answers.
(a) $f: \mathbb{Z} \rightarrow \mathbb{Z}$ given by $f(n)=2 n$
(b) $g: \mathbb{Z} \rightarrow \mathbb{Z}$ given by $g(n)=-n+1$
(c) $h: \mathbb{Z} \rightarrow \mathbb{N} \cup\{0\}$ given by $h(n)=|n|$
(d) $j:\{n \in \mathbb{Z}: n \geq 2\} \rightarrow \mathbb{Z}$ given by $j(n)=f_{n}$, where $f_{n}$ is the $n$-th Fibonacci number
